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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,311	08/21/2001	Claude Barlier	CIRTES2	6577

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Gary M Cohen
Strafford Building Number Three
125 Strafford Avenue Suite 300
Wayne, PA 19087-3318

EXAMINER

AFTERGUT, JEFF H

ART UNIT

PAPER NUMBER

1733

DATE MAILED: 03/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/856,311

Applicant(s)

BARLIER, CLAUDE

Examiner

Jeff H. Aftergut

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1733

-- **Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --**
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: .

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Claim Rejections - 35 USC § 102/103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4, 7, and 8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Feygin.

Feygin suggested that it was known at the time the invention was made to form a three dimensional model by assembling a plurality of cut pieces of sheet material. the cur pieces were assembled together by providing openings within the individual layers which were aligned with pins and/or bolts which where disposed through the individual sheets when assembled. Feygin suggested that one skilled in the art would have provided openings 80 in the sheets and aligned the same with pins in order to form a three dimensional object, see column 8, lines 13-20, column 11, lines 6-14, and column 14, lines 57-68. The reference suggested the use of pins 78 as well as openings 80 within the individual sheets in order to assemble the individual sheets together. The reference additionally suggested that those skilled in the art would have utilized weaken portions 158, Figure 13, column 10, line 67-column 11, line 5. while the reference did not expressly state that the holes depicted in Figure 13 of the individual sheet were used to

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assemble the individual layers into a three dimensional object, the openings appear in the same position as openings 80 in the other sheets such as in Figure 12 and one skilled in the art would have been expected to utilize the openings in Figure 13 to assemble the individual layers to make the three dimensional object in the manner directed by the reference. Additionally, while the reference did not expressly state that portions 158 were frangible, it appears to be the same removal of material as described by applicant to provide the frangible portions and therefore one skilled in the art at the time the invention was made would have been expected to provide such as frangible portions (note that the portions 158 are referred to as thin strips which were stated to be removed after the lamination of the individual layers together). The incorporation of openings in Figure 13 to facilitate the assembly of the individual layers in Feygin as suggested with regard to Figure 12 and as depicted in but not labeled in Figure 13 would have been obvious to those skilled in the art at the time the invention was made as such would have facilitated the proper alignment of the individual plies to make the three dimensional object.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feygin in view of any one of Thomas et al or Weaver optionally further taken with Kinzie.

Feygin is discussed above in paragraph 3 and applicant is referred to the same for a complete discussion of the reference. To further evidence that those skilled in the art at the time

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the invention was made would have incorporated pins and/or threaded members through openings in the individual layers used to make the three dimensional object, the references to either one of Thomas et al or Weaver are cited.

Each one of Thomas et al or Weaver suggested that when manufacturing a three dimensional object one skilled in the art at the time the invention was made would have incorporated openings within the individual plies through which pins were inserted in order to assemble the individual layers together. The applicant is more specifically referred to Thomas et al where the pins 52 were utilized to align the sheets 38 through registration holes 42, see column 5, lines 26-44, for example. Weaver suggested that one would have provided the various sheet laminations with holes 26 therein which were aligned with pins 25 to assemble the pieces together, see column 5, lines 12-24, column 6, lines 62-column 7, line 4, column 7, lines 25-30. because it would have ensured that there was proper registration between the individual layers where were formed by cutting the individual sheets, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate openings through which pins were disposed in order to properly align the individual layers as suggested was known in the art by any one of Thomas et al or Weaver in the operation of manufacturing a three dimensional object from individual plies as suggested by Feygin. Use of pins and/or bolts to secure the individual layers of Feygin as depicted in Figure 13 would have been within the purview of the ordinary artisan.

With regard to claim 2, note that the references all suggested circular openings through which the alignment pins were disposed. Regarding claim 3, note that while all references suggested the use of circular openings, one skilled in the art would have understood that

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triangular or rectangular openings with triangular or rectangular bolts and/or pins would have also satisfied the alignment requirements. Such are taken as conventional in the art of securing members together and it certainly would have been within the purview of the ordinary artisan to utilize the same with none but the expected results. Regarding claim 4, note that the references suggested that the individual plies were assembled together to make a self supporting article (in particular the reference to Feygin suggested the joining of the plies together as did Weaver.

Regarding claim 5, the references to Weaver suggested that the bottom plate of the mold elements formed would have had a plurality of openings therein through which the pins were disposed. Regarding claim 6, note that the references to each one of Thomas et al and Feygin both suggested that one skilled in the art would have utilized two pins or bolts for alignment of the pieces when manufacturing the three dimensional object. Regarding claims 7 and 8, note that the references suggested the same finished assembly, see Feygin for example.

While it is believed the Feygin suggested that those skilled in the art would have employed the thin strips as frangible portions which were easily cut and removed from the two dimensional pieces once assembled into the three dimensional assembly, the reference to Kinzie is cited to further evidence that those skilled in the art would have employed such frangible portions. Kinzie suggested that those skilled in the art at the time the invention was made would have assembled a plurality of sheets together wherein the same included tabs 67 of material which were retained in the sheets until it was time to assemble the sheet materials together wherein the sheets were glued together and the tab portions 67 were cut from the waste material and the desired colored portions of sheet material were assembled together. See column 8, lines 30-53. certainly, it would have been within the purview of the ordinary artisan to utilize the thin

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portions of Feygin in the manner described by applicant as the reference to Kinzie suggested the same. it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the two dimensional plies of Feygin which included thin portions as well as openings therein as depicted in Figure 13 wherein the thin portions were easily frangible as suggested by Kinzie and wherein the openings would have been used to align the various two dimensional plies together into a three dimensional object as suggested by either one of Thomas et al or Weaver.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 2, the language “particularly prototypes” appears which is not deemed to render the scope of the claim unclear. It cannot be ascertained whether the narrower limitation of prototypes is limiting in the claim or whether the broadly recited limitation of producing “mechanical parts and objects” is what the claim is limited to. It is suggested that applicant recite in a dependent claim that the “mechanical parts and objects” which were manufactured were prototypes and delete the language “particularly prototypes” from claim 1. alternatively, claim 1 could be rearranged to recite that it was a method for producing prototypes. In claim 1, line 3, “of the type” should be changed to --of a type-- in order to provide proper antecedent basis for the same. In claim 1, lines 3-4, it is suggested that “the successive phrases” be changed to --

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successive phrases-- in order to provide proper antecedent basis for the various steps of the claim. In claim 1, lines 5 and 6, the language “elemental layers or laminations” should be changed to --elemental laminations—as these laminations are referred to as both layers and laminations throughout the claim and for consistency it is suggested that one recite only one term for the material. In claim 1, line 7, it is suggested that the language “the collection of layers” be changed to -- a collection of laminations-- as the layers were defined as laminations above and the language “the collection” lacks proper antecedent basis. In claim 1, line 8, “assembling the layers” should be changed to -- assembling the laminations -- as addressed above the layers were defined as layers or laminations. In claim 1, line 11, “the unitary laminations” lacks proper antecedent basis as no “unitary laminations” have been previously defined. It is suggested that “the” be deleted. In claim 1, line 12, “the breakdown” lacks proper antecedent basis. It is suggested that “the” be changed to --a--. In claim 1, line 16, the language “the desired shape” should be changed to --a desired shape-- to provide proper antecedent basis for the same. In claim 1, lines 17-18, the language “the finished part” appears which lacks proper antecedent basis because no finished part has been previously defined. It is suggested that “the” be changed to --a--.

In each of claims 7 and 8, lines 2 and 1 respectively, the applicant employs the language “particularly a prototype”. As addressed above, it is unclear whether the narrower limitation further limits the broad recitation of “a mechanical part”. It is suggested that applicant recite clearly and concisely that a prototype is what is being manufactured.

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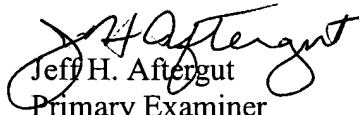
Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yang et al suggested a similar LOM technique for making three dimensional objects. The references Walczyk suggested the use of pins to assemble the plural laminations together.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 703-308-2069. The examiner can normally be reached on Monday-Friday 6:30-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W. Ball can be reached on 703-308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Jeff H. Aftergut
Primary Examiner
Art Unit 1733

JHA
March 10, 2003